

Ship 12/01

# Work Order ID 63891



Tuesday, November 18, 2010 11:14:34 AM

Item ID: D4055-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Fuel Tank Assembly

Start Date: 11/19/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 12/17/2010 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: MF

Date: 10-11-18 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D4055

A

100

Weld per dwg A/R Aluminum rod Batch: M108436 0.00

M115928

0.00

Large Fch

Large Fab

Memo

1- weld D4023-1 cap, D3999-11 earth tab and D4008-11 hinge onto D4055-11 as per dwg D4055

2- Weld D4001-1 and D4000-5 onto D4055-1 Top

2- Weld D4055-9 and D4055-11 together

2- weld D3999-041/-043 doubler followed by D3999-9 inside tank, ensure doubler and angle holes line-up for D4000-047

3- Weld D4000-043 and D4000-045 on tank as per dwg.

4- Instal D4000-9 grommets as per dwg. Weld D4055-3 aft end as per dwg, locate D4000-1 fitting using locating jig DTXXXX and weld as per dwg

5- Weld D4055-7 fwd end

10.11.23  
one time  
only

6- Alodine D4055-1-3-7-9-11

3

3

10.12.24 1 of 1

P10 →

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
<del>11/01/12</del>	<del>#100</del>	<del>Perm. Change  ADD Routin numbers to Pick list</del>		<del>N/A</del>			<del>S 11/01/12</del>	

Part No: D4055-041 PAR #: N/A Fault Category: Prod eng cover NCR: Yes No DQA: Yes Date: 11.01.13  
 Resolution: re-work Disposition: re-work QA: N/C Closed Date: 11/04/25

NCR: 63891.		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11/01/13	#100	w/o has no Routing/ Sequence numbers for picking parts R.L. w/o's incomplete	BS/102	- ADD Routing/sequence numbers to match correct picking sequence to w/o.	BS 11.04.08	S 11/04/08	BS/102	S 11/01/13
			BS/102	Attach copy of Bom for Reference	BS 11.04.08		BS/102	S 11/01/13

NOTE: Date & initial all entries

**Work Order ID 63891**

Thursday, November 18, 2010 11:14:34 AM

Page 2

Item ID: D4055-041

Accept

Setup Start

Revision ID:

Stop

Item Name: Fuel Tank Assembly

Start Date: 11/19/2010 Start Qty: 1.00

Cust Item ID:

Required Date: 12/17/2010 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

110

QC9- Inspect visual per QSI004- Fusion Welds

0.00



QC

Memo

0.00

Quality Control

1 8E11/01/03

121

Weld per dwg A/R Aluminum rod Batch: M107436 0.00

M115428



Large Fab

Memo

0.00

Large Fab

1-Weld top D4055-1

10.12.24

1 8E11/01/03

122

QC9- Inspect visual per QSI004- Fusion Welds 0.00



QC

Memo

0.00

Quality Control

1 8E11/01/03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 63891

Thursday, November 18, 2010 11:14:34 AM

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Item ID: D4055-041

Accept

Setup Start

Revision ID:

Stop

Item Name: Fuel Tank Assembly

Start Date: 11/19/2010 Start Qty: 1.00

Cust Item ID:

Required Date: 12/17/2010 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

123

QC5- Inspect part completeness to step on W/O

0.00



QC

Quality Control

Memo

pressure TESTED TO 4.5 PSI  
@ 15 mins

0.00

- S. L. L. 06

11/01/03  
11/01/05

XL

1

Pto →

130

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Hand Finishing

Memo

brush alodine on tank. No alodine inside

0.00

⇒ 11/01/10

XL

1

140

QC3- Inspect Part Finish

0.00



QC

Quality Control

Memo

0.00

1 BK 11-01-10.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D4055-041 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



NCR: <u>63891</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11/01/03	<del>B</del> 123	Found @ Pressure test that the Plug wouldn't fit in <u>D4004-045</u> due to weld in + machined. After re-retapping it was found that the two top threads were some what destroyed.		Continue with pressure test to confirm tank is suitable.	<del>11/01/03</del> 11/01/03	<del>11/01/03</del> 11/01/03		
		<del>Found</del> RE D4004-045 <sup>was</sup> <del>was</del> the <del>issue</del> only issue. RE. Process.		COUNTERBORE THREADED HOLE TO CLEAN OUT DAMAGED THREADS. RETAP TO CLEAN OUT AND REDEFINE THREADS.	<del>11/01/05</del> 11/01/05	<del>11/01/05</del> 11/01/05		
				RE PRESSURE TEST TANK AFTER REWORK SEE ATTACHED EMAIL.	<del>11/01/05</del> 11/01/05	<del>11/01/05</del> 11/01/05		



NOTE: Date & initial all entries




# Work Order ID 63891

Thursday, November 18, 2010 11:14:34 AM

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Item ID:	D4055-041	Accept		Setup	Start	
Revision ID:					Stop	
Item Name:	Fuel Tank Assembly					
Start Date:	11/19/2010	Start Qty:	1.00	Cust Item ID:		
Required Date:	12/17/2010	Req'd Qty:	1.00	Customer:		
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150  QC Quality Control	<del>Memo Pressure test as per dwg</del>	0.00  0.00							
			<del>=&gt; JH 11/01/10</del>			1	0		WAS pho ->
160  HandFinish Hand Finishing	<del>Chemical Conversion as per dwg</del>	0.00  0.00							
	AS 11.01.10		<del>=&gt; JB 11/01/10</del>			1	0		
170  Powdercoat Powder Coating	Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3 M112588 Memo ***Mask prior to powdercoat*** Start Time: 8:25 Oven Temperature: 320° Finish Time: 8:55	0.00  0.00							
						1	162		11-01-10.

W/O: 63891		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
11/01/12	#150	Remove step #150 AND ADD <sup>to step 123</sup> comment to Pressure Test to 4.5 PSI for 15 min to step #123	BE	11.01.20			S 11/01/12

Part No: D4055-041 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



**Work Order ID 63891**

Thursday, November 18, 2010 11:14:34 AM

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Item ID: D4055-041

Accept

Setup Start

Revision ID:

Stop

Item Name: Fuel Tank Assembly

Start Date: 11/19/2010 Start Qty: 1.00

Required Date: 12/17/2010 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

180



QC

Quality Control

QC3- Inspect Part Finish

Memo

0.00

0.00

8/11/01/12

190



Small Fab

Small Fab

Memo

Assemble as per dwg

0.00

0.00

8/5/01/12 ①

200



QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

8/11/01/12

④

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Page 6

[illegible][illegible]

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**Cust Item ID:**

**Customer:**

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[illegible]

**Insp.  
Stamp**

1. 11/10/12 HA/BR Ph  $\rightarrow$

**Abstract**

0.00

✓ Seal inside of tank using

Sulowitz

**Abstract**

0.00

## Quality Control

0.00

\_\_\_\_\_

### Packaging

## Packaging

## Memo

PPP 65024 0.00

Case 1/3

W/O: 63891		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
		Rem: Chan						
W/O: 63891	#210	move step #210 to AFTER step #180	EZ	11.01.20			11/01/12	

Part No: D4055-041 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**Work Order ID 63891**

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Thursday, November 18, 2010 11:14:34 AM

**Item ID:** D4055-041**Accept****Setup Start****Revision ID:****Stop****Item Name:** Fuel Tank Assembly**Start Date:** 11/19/2010 **Start Qty:** 1.00**Cust Item ID:****Required Date:** 12/17/2010 **Req'd Qty:** 1.00**Customer:****Reference:****Run Start****Approvals:** **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_**Stop****QC:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **SPC (Y/N):** \_\_\_\_\_ **Date:** \_\_\_\_\_**Sequence ID/  
Work Center ID****Operation  
Description****Set Up/  
Run Hours****Tool ID****Tool #****Plan  
Code****Accept  
Qty****Reject  
Qty****Reject  
Number****Insp.  
Stamp**

240

QC21- Final Inspection - Work Order Release

0.00



QC

**Memo**

0.00

Quality Control

11/01/20 DJ

MUF

11-01-13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Thursday, November 18, 2010 11:14:33 AM

Page 1

Work Order ID: 63891

Parent Item: D4055-041

Parent Item Name: Fuel Tank Assembly






Start Date: 11/19/2010

Required Date: 12/17/2010

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev A 10.03.08 new issue prelim EC verified by:DD IPP Rev:B  
10.05.17 ECN10-562 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3997-1  Baffle		Manufactured	No				Each	0.0000	1	1			
D3997-5  Placard		Manufactured	No				Each	7.0000	2	2			
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				ST108			7						
					55402		7						
D3997-11  Placard		Manufactured	No				Each	8.0000	1	1			
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				ST108			8						
					55407		8						
D3997-17  Placard		Manufactured	No				Each	8.0000	1	1			
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				ST108			8						
					55410		8						
D3997-29  Placard		Manufactured	No				Each	8.0000	1	1			
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				ST108			8						
					55416		8						

B 55400 (1x)

EP 5/11/01/12

EP 5/11/01/12

EP 5/11/01/12

EP 5/11/01/12

EP 5/11/01/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

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Thursday, November 18, 2010 11:14:33 AM

Work Order ID: 63891

Parent Item: D4055-041

Parent Item Name: Fuel Tank Assembly

Start Date: 11/19/2010

Required Date: 12/17/2010

Start Qty: 1.00

Required Qty: 1.00

D3997-43



Placard

Manufactured No

Each

8.0000

1



1

*ES 11/01/12*

Location

Loc Qty

Loc Code

ST108

8

55422

8

Each

8.0000

1



1

*10-11-24*

D3999-7



Corner

Manufactured No

Location

Loc Qty

Loc Code

ENG

6

55645

6

ST110

2

59478

2

Each

7.0000

1



1

*10-11-24*

D3999-9



Angle

Manufactured No

Location

Loc Qty

Loc Code

ENG

5

55646

5

ST

2

59479

2

Each

7.0000

1



1

*10-11-24*

D3999-11



Earth Tab

Manufactured No

Location

Loc Qty

Loc Code

ENG

5

55863

5

ST

2

59477

2

Thursday, November 18, 2010 11:14:33 AM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Thursday, November 18, 2010 11:14:33 AM

Work Order ID: 63891



Parent Item: D4055-041



Parent Item Name: Fuel Tank Assembly

Start Date: 11/19/2010

Required Date: 12/17/2010

Start Qty: 1.00

Required Qty: 1.00

✓ D3999-041  
  
 Baffle Assembly, Aft

Manufactured No

Each 2.0000 1 1



*10.11.24*

Location

Loc Qty

Loc Code

ST137

2

59473

1

59474

1

✓ D3999-043  
  
 Baffle Assembly, Fwd

✓ Manufactured No

Each 2.0000 1 1



*10.11.24*

Location

Loc Qty

Loc Code

ST137

2

59475

1

59476

1

✓ D4000-1  
  
 Fuel Supply Fitting

Manufactured No

Each 6.0000 1 1



*10.11.24*

Location

Loc Qty

Loc Code

ENG

3

55867

3

ST

3

59698

3

✓ D4000-5  
  
 Fuel Tank Vent Fitting

Manufactured No

Each 4.0000 1 1



*10.11.24*

Location

Loc Qty

Loc Code

ENG

4

55869

2

59699

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Page 4

Thursday, November 18, 2010 11:14:34 AM

Work Order ID: 63891

Parent Item: D4055-041













Parent Item Name: Fuel Tank Assembly

Start Date: 11/19/2010

Required Date: 12/17/2010

Start Qty: 1.00

Required Qty: 1.00

✓ D4000-9	Manufactured	No	Each	4.0000	3	3		<u>10.11.24</u>
								
Grommet								
<div> <div>Location</div> <div>ST114</div> <div>59486</div> </div>								
			4					
			4					<u>3</u>
* <del>D4000-043</del> D4000-041 <sup>2</sup>	Manufactured	No	Each	0.0000	1	1		<u>10.12.21 364042</u>
								
Drain Fitting Assembly, Fwd								
<del>D4000-045</del> D4000-043 <sup>2</sup>	Manufactured	No	Each	0.0000	1	1		<u>10.12.21 364043</u>
								
Fuel Pickup Fitting Assembly								
✓ <del>D4000-047</del> D4000-045 <sup>2</sup>	Manufactured	No	Each	0.0000	1	1		<u>10.11.23 359484</u>
								
Fuel Pickup Fitting Assembly								
D4001-1	Manufactured	No	Each	4.0000	1	1		<u>10.11.24</u>
✓ 								
Fitting								
<div> <div>Location</div> <div>ENG</div> <div>59487</div> </div>								
			4					
			4					<u>1</u>
D4008-11	Manufactured	No	Each	3.0000	1	1		<u>10.11.23</u>
✓ 								
Hinge Half								
<div> <div>Location</div> <div>N/A</div> <div>59490</div> </div>								
			3					
			3					<u>1</u>

Thursday, November 18, 2010 11:14:34 AM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Thursday, November 18, 2010 11:14:34 AM

Work Order ID: 63891

Parent Item: D4055-041

Parent Item Name: Fuel Tank Assembly

Start Date: 11/19/2010

Required Date: 12/17/2010

Start Qty: 1.00

Required Qty: 1.00

D4008-041  
  
 Fuel Filler Splash Guard Assembly

Manufactured No

Each 3.0000



1

1

*EP 11/01/12*

Location

Loc Qty

Loc Code

ST112

3

59516

1

59517

2

1

D4023-1  
  
 Cap and Flange

Manufactured No

Each 3.0000



1

1

*KE 10.11.24*

Location

Loc Qty

Loc Code

ENG

3

55943

3

1

D4025-1  
  
 Fuel Quantity Sender

Manufactured No

Each 4.0000



1

1

*EP 11/01/12*

Location

Loc Qty

Loc Code

ENG

1

55937

1

ST116

3

62139

3

1

D4055-11  
  
 Tank Front and Bottom

Manufactured No

Each 1.0000



1

1

*KE 10.12.23*

Location

Loc Qty

Loc Code

ENG

1

55962

1

1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries



# Picklist Print

Thursday, November 18, 2010 11:14:34 AM

Work Order ID: 63891

Parent Item: D4055-041

Parent Item Name: Fuel Tank Assembly


Start Date: 11/19/2010


Required Date: 12/17/2010


Start Qty: 1.00


Required Qty: 1.00

✓ D4055-9 Manufactured No Each 1.0000 1 1  
  
 Tank Back  Pl 10.12.23

Location Loc Qty Loc Code  
 ENG 1  
55961 1  
 Each 1.0000 1 1  
 Pl 10.12.23  
 D4055-7 Manufactured No Tank Fwd End

Location Loc Qty Loc Code  
 ENG 1  
55960 1  
 Each 1.0000 1 1  
 Pl 10.12.23  
 D4055-5 Manufactured No Tank Upper Cut Out

Location Loc Qty Loc Code  
 WA 363946 1  
55959 1  
 Each 1.0000 1 1  
 Pl 10.12.21  
 D4055-3 Manufactured No Tank Aft End

Location Loc Qty Loc Code  
 ENG 364030 1  
55957 1  
 Each 1.0000 1 1  
 Pl 10.12.21  
 D4055-1 Manufactured No Tank Top

Location Loc Qty Loc Code  
 ENG 55963 1  
 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Thursday, November 18, 2010 11:14:34 AM

Work Order ID: 63891

Parent Item: D4055-041

Parent Item Name: Fuel Tank Assembly

Start Date: 11/19/2010

Required Date: 12/17/2010

Start Qty: 1.00

Required Qty: 1.00

D4057-1

Manufactured No

Each

33.0000

3

3



Retaining Ring



*10.11.24*

Location

Loc Qty

Loc Code

ST124

33

55826

33

Each

20.0000

5

5

AN3H5A

Purchased

No



Bolt



*11/01/12*

Location

Loc Qty

Loc Code

ST350

20

114941

20

Each

1,920.000

5

5

NAS1149D0363J

Purchased

No



Washer



*11/01/12*

Location

Loc Qty

Loc Code

ST298

1920

114292

114

115107

25

115622

1172

116007

400

116025

200

9221

9

*5*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

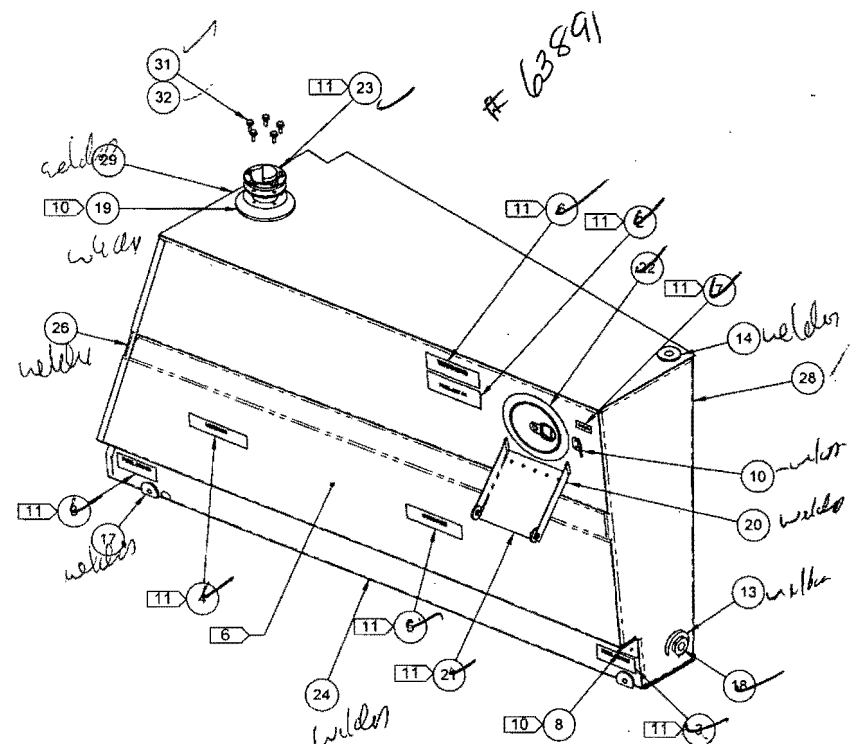
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

ITEM NO.	QTY. -041	PART NUMBER	DESCRIPTION
1	X	D4055-041	FUEL TANK ASSEMBLY
2	1	D3999-1	PLACARD "FUEL JET A1"
3	2	<del>D3997-55</del>	PLACARD "AUX FUEL DRAIN"
4	1	<del>D3997-11</del>	PLACARD "LOADING"
5	1	<del>D3997-17</del>	PLACARD "STOWAGE"
6	1	<del>D3997-29</del>	PLACARD "WARNING"
7	1	<del>D3997-43</del>	PLACARD "EARTH"
8	1	D3999-7	CORNER
9	1	D3999-9	ANGLE
10	1	D3999-11	EARTH TAB
11	1	D3999-041	BAFFLE ASSEMBLY, AFT
12	1	D3999-043	BAFFLE ASSEMBLY, FWD
13	1	D4000-1	FUEL SUPPLY FITTING
14	1	D4000-5	FUEL TANK VENT FITTING
15	3	D4000-9	GROMMET
16	1	D4000-043	AFT FUEL SUMP DRAIN ASSEMBLY
17	1	D4000-045	FORWARD FUEL SUMP DRAIN ASSEMBLY
18	1	D4000-047	FUEL PICK UP AND STRAINER ASSEMBLY
19	1	D4001-1	FITTING
20	1	D4008-11	TANK HINGE HALF
21	1	D4008-041	FUEL FILLER SPLASH GUARD ASSEMBLY
22	1	D4023-1	FUEL CAP
23	1	D4025-1	FUEL SENDER
24	1	D4055-11	TANK FRONT AND BOTTOM
25	1	D4055-9	TANK BACK
26	1	D4055-7	TANK FORWARD END
27	1	D4055-5	TANK UPPER CUT OUT
28	1	D4055-3	TANK AFT END
29	1	D4055-1	TANK TOP
30	3	D4057-1	RETAINING RING
31	5	AN3H5A	BOLT
32	5	NAS1149D0363J	WASHER



#### D4055-041 AUX TANK

#### NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT "GREY SANDTEX" (4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D350-794-041" USING D2729-1 RED DECAL
- 7) WEIGHT: 27.57 lbs
- 8) WELD PER DART QSI 004
- 9) CAP ALL TANK ACCESS POINTS AND PRESSURIZE TANK TO 1.5 PSI AFTER ASSEMBLY. VERIFY NO LEAKS.
- 10) MASK PRIOR TO POWDER COAT
- 11) INSTALL AFTER POWDER COAT

**RELEASED**  
2010-05-05  
MP

A	NEW ISSUE		10.04.16
REV		DESCRIPTION	BY DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.04.16		

<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. <b>D4055</b>	REV. A
TITLE <b>TANK</b>	SHEET 1 OF 15
SCALE NTS	
<small>COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS UNCLASSIFIED AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

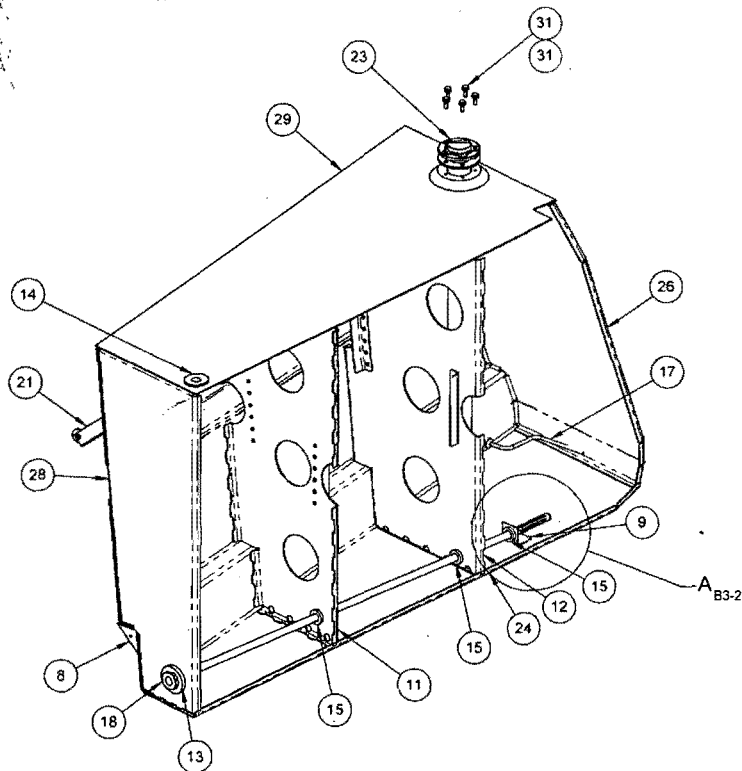
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

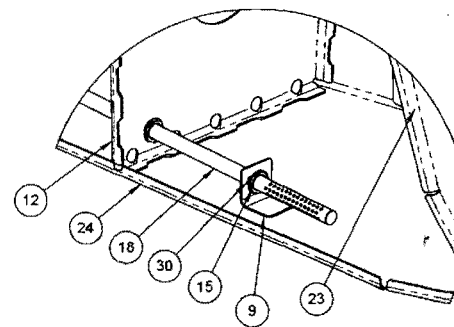
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



**D4055-041 AUX TANK**  
D4055-9 TANK BACK REMOVED  
TO SHOW INTERIOR DETAIL



**DETAIL A<sup>85-2</sup>**  
ROTATED FOR CLARITY  
SCALE: 2X

**RELEASED**  
2010-05-05  
JMI

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4055	SHEET 2 OF 15
APPROVED		TITLE	SCALE
DE APPR.		TANK	NTS
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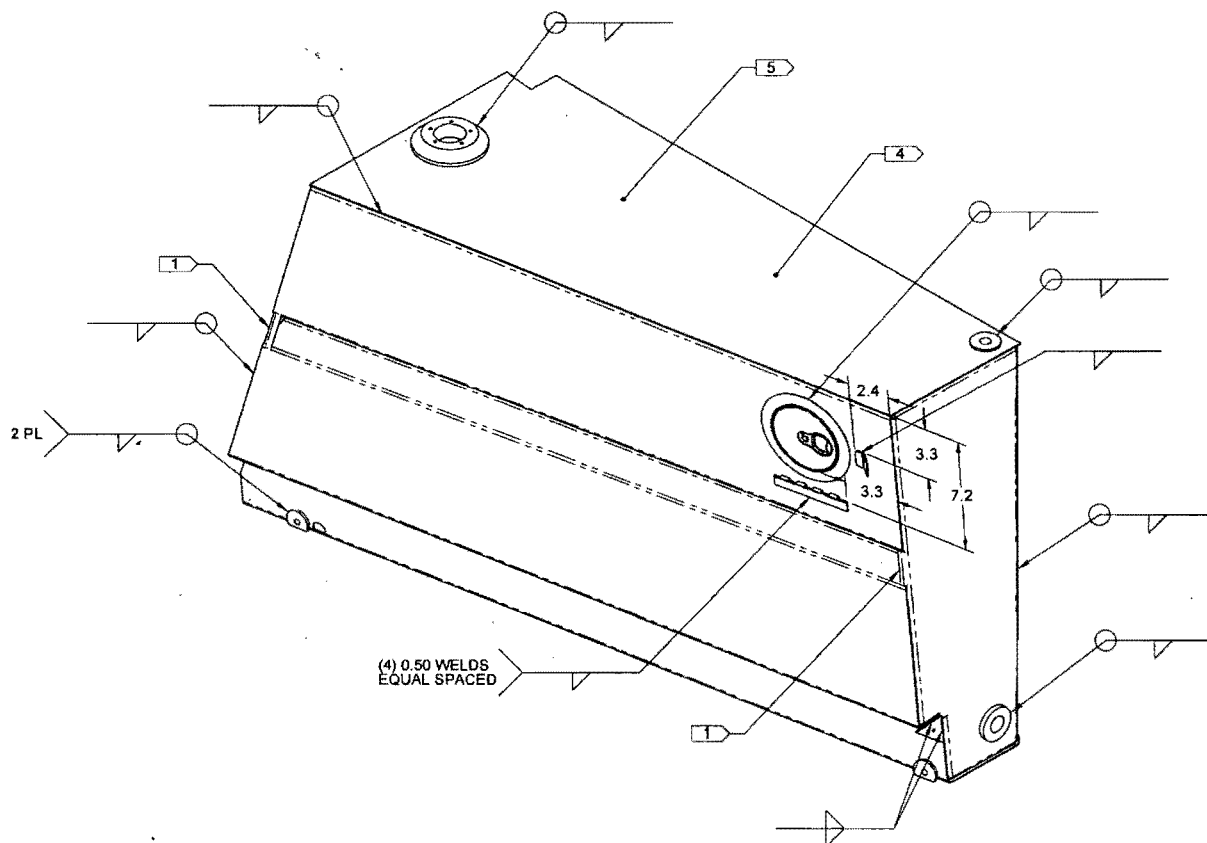
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries





**D4055-041 AUX TANK**  
WELDING DETAIL

**RELEASED**  
2010-05-05  
N/A

**NOTES:**

- 1) TRIM FLANGES AS REQUIRED TO FIT ASSEMBLY
- 2) FINAL CHECK BEFORE LAST PANEL INSTALLED:
  - END OF FUEL PICK UP TUBE IS 0.80 OFF THE TANK FLOOR AND 1.96 FROM SIDE WALL
  - FWD AND AFT DRAIN TUBES EXTEND TO CENTER OF TANK
  - ALL SWarf REMOVED
- 3) AFTER FINAL ASSEMBLY, SLOSH FUEL TANK WITH MIL-S-4383 OR EQUIVALENT (PR-1005-L BUNA-N-SLOSH) SLOSHING SEALER. ENSURE FILTERS, FITTINGS AND SENDER UNITS ARE REMOVED AFTER WELDING
- 4) ACCEPTABLE TO DRILL 6 (TYP)  $\phi 0.312$  HOLES IN TANK TOP TO WELD TOP TO AFT BAFFLE (1 HOLE PER BAFFLE TAB)
- 5) ACCEPTABLE TO DRILL 7 (TYP)  $\phi 0.312$  HOLES IN TANK TOP TO WELD TOP TO FWD BAFFLE (1 HOLE PER BAFFLE TAB)

DESIGN		<b>DART AEROSPACE LTD</b>	
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CHECKED		DRAWING NO.	REV. A
MFG. APPR.		<b>D4055</b>	SHEET 3 OF 15
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**NOTE:** Date & initial all entries

8

7

6

5

4

3

2

1

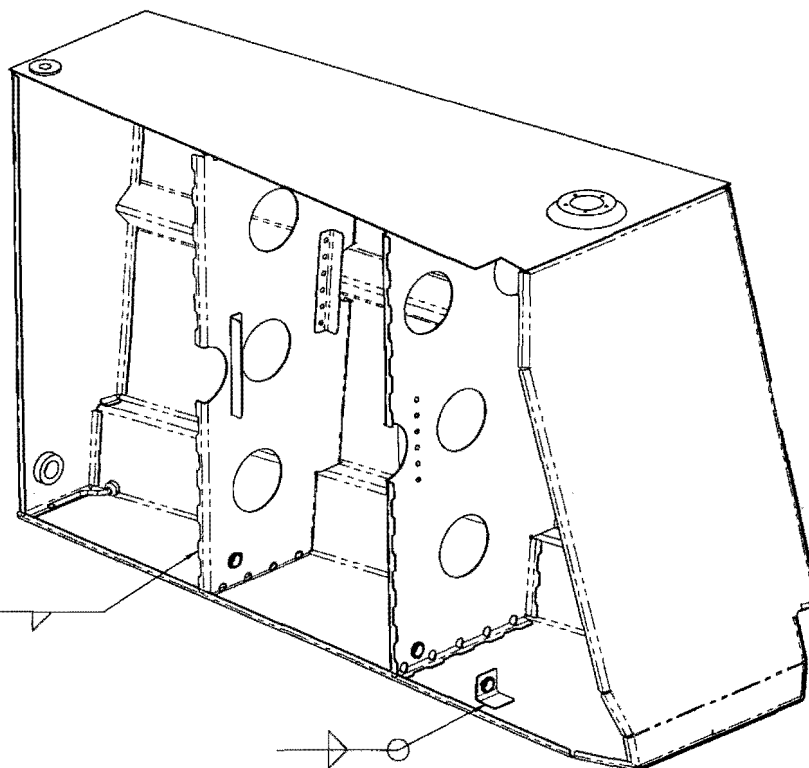
D

C

B

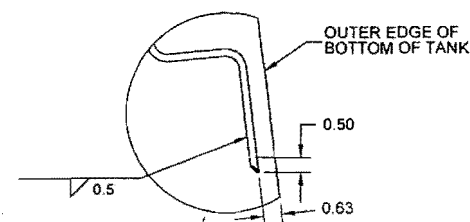
A

WELD ALL TABS



**D4055-041 AUX TANK**  
WELDING DETAIL

#63891



**DRAIN TUBE INSTALLATION - TYP**  
VIEWED FROM ABOVE  
FWD END SHOWN, AFT END OPPOSITE

**RELEASED**  
2010-05-05  
MP

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4055	SHEET 4 OF 15
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A

W/O:		WORK ORDER CHANGES					
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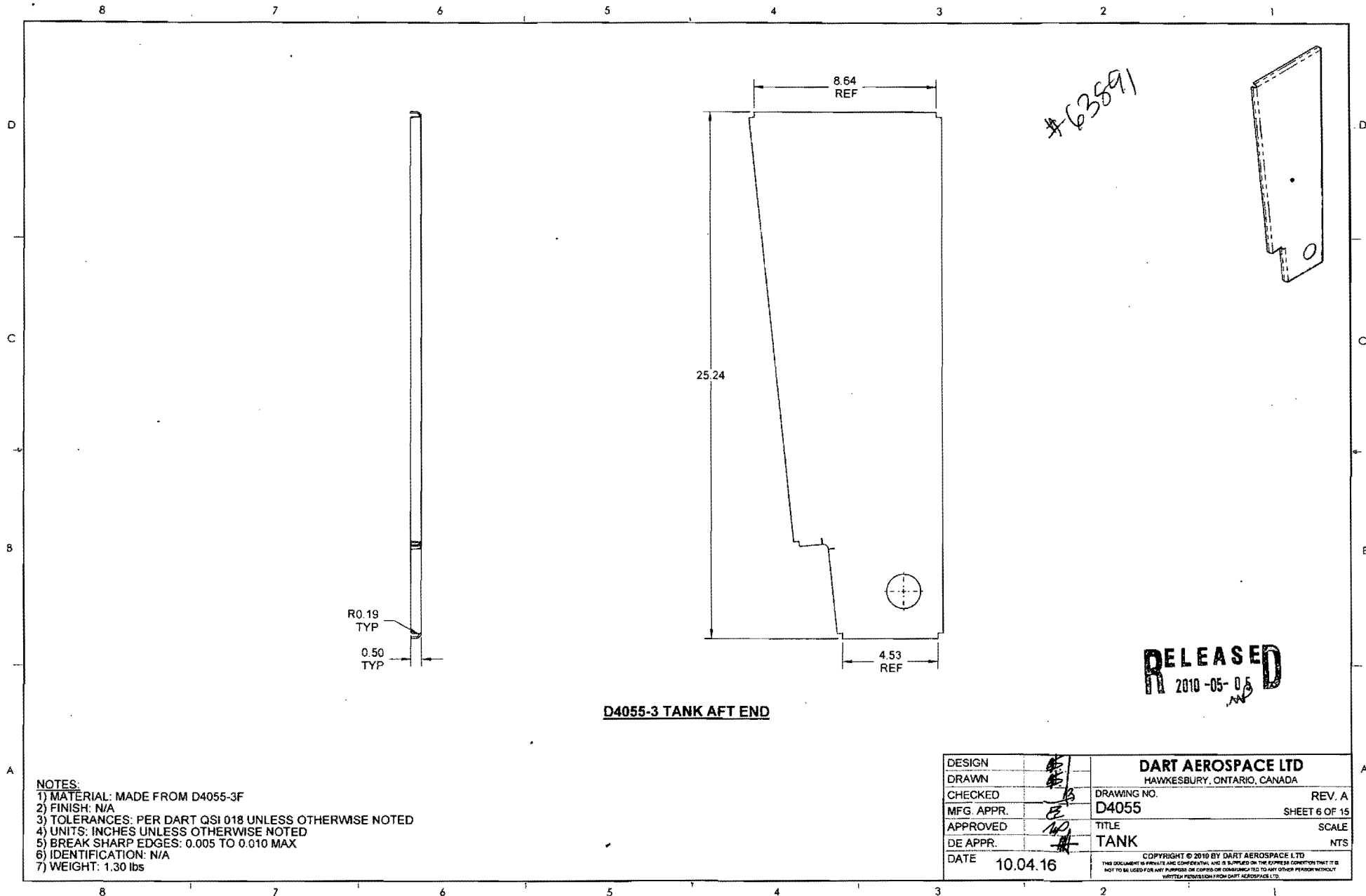
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**NOTE:** Date & initial all entries



**NOTES:**

- 1) MATERIAL: MADE FROM D4055-3F
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 1.30 lbs

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		<b>D4055</b>	SHEET 6 OF 15
APPROVED		TITLE	SCALE
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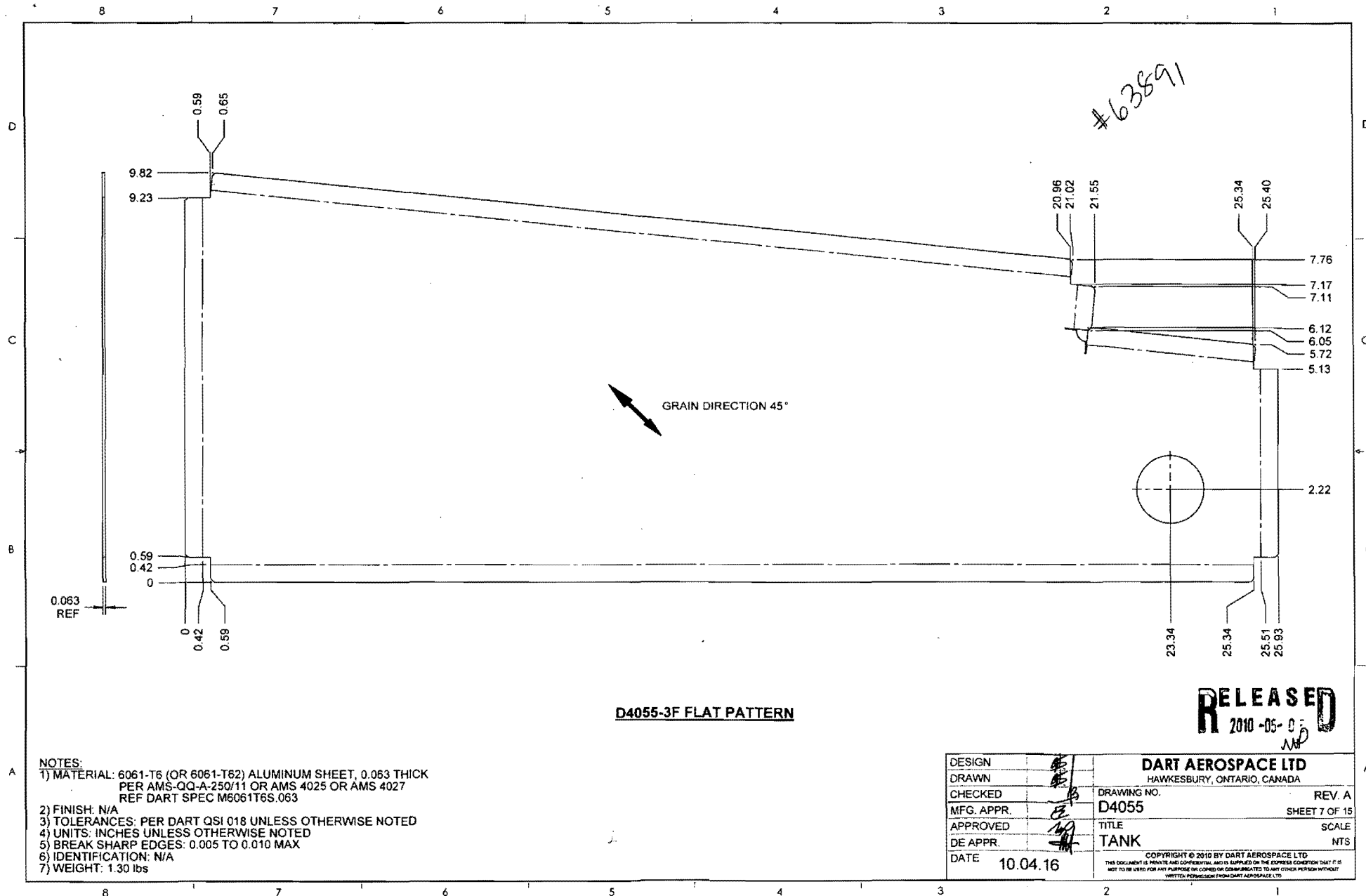
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





- NOTES:
- 1) MATERIAL: 6061-T6 (OR 6061-T62) ALUMINUM SHEET, 0.063 THICK  
PER AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027  
REF DART SPEC M6061T6S.063
  - 2) FINISH: N/A
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: N/A
  - 7) WEIGHT: 1.30 lbs

**RELEASED**  
2010-05-05

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4055	SHEET 7 OF 15
APPROVED		TITLE	SCALE
DE APPR.		TANK	NTS
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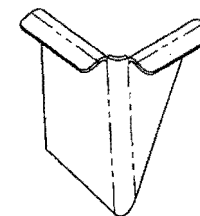
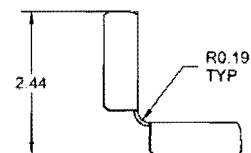
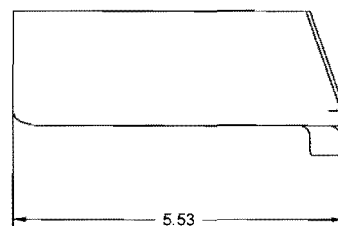
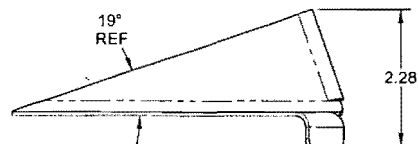
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



#63591

# **D4055-5 UPPER CUT OUT**

**RELEASED**  
2010-05-05  
MP

- NOTES:  
 1) MATERIAL: MADE FROM D4055-5F  
 2) FINISH: N/A  
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED  
 4) UNITS: INCHES UNLESS OTHERWISE NOTED  
 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX  
 6) IDENTIFICATION: N/A  
 7) WEIGHT: 0.10 lbs

DESIGN	45	<b>DART AEROSPACE LTD</b>	
DRAWN	45	HAWKESBURY, ONTARIO, CANADA	
CHECKED	45	DRAWING NO.	REV. A
MFG. APPR.	45	<b>D4055</b>	SHEET 8 OF 15
APPROVED	45	TITLE	SCALE
DE APPR.	45	<b>TANK</b>	NTS
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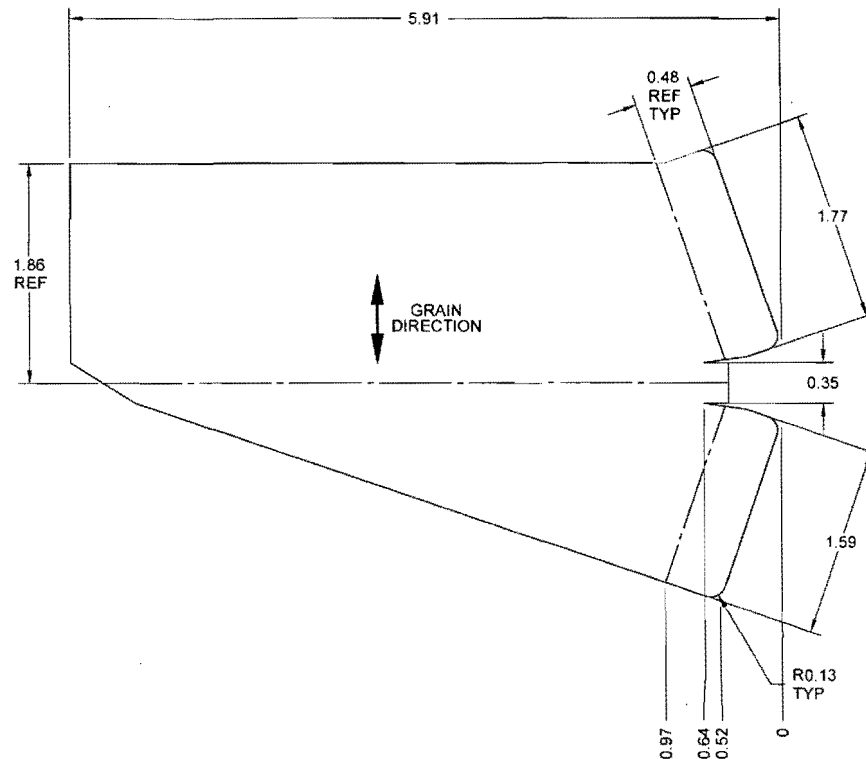
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_


NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



RELEASED  
2010-05-05  
MP

2) FINISH: N/A  
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED  
4) UNITS: INCHES UNLESS OTHERWISE NOTED  
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX  
6) IDENTIFICATION: N/A  
7) WEIGHT: 0.10 lbs

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		<b>D4055</b>	SHEET 9 OF 15
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DE APPR.	<b>TANK</b>	NTS	
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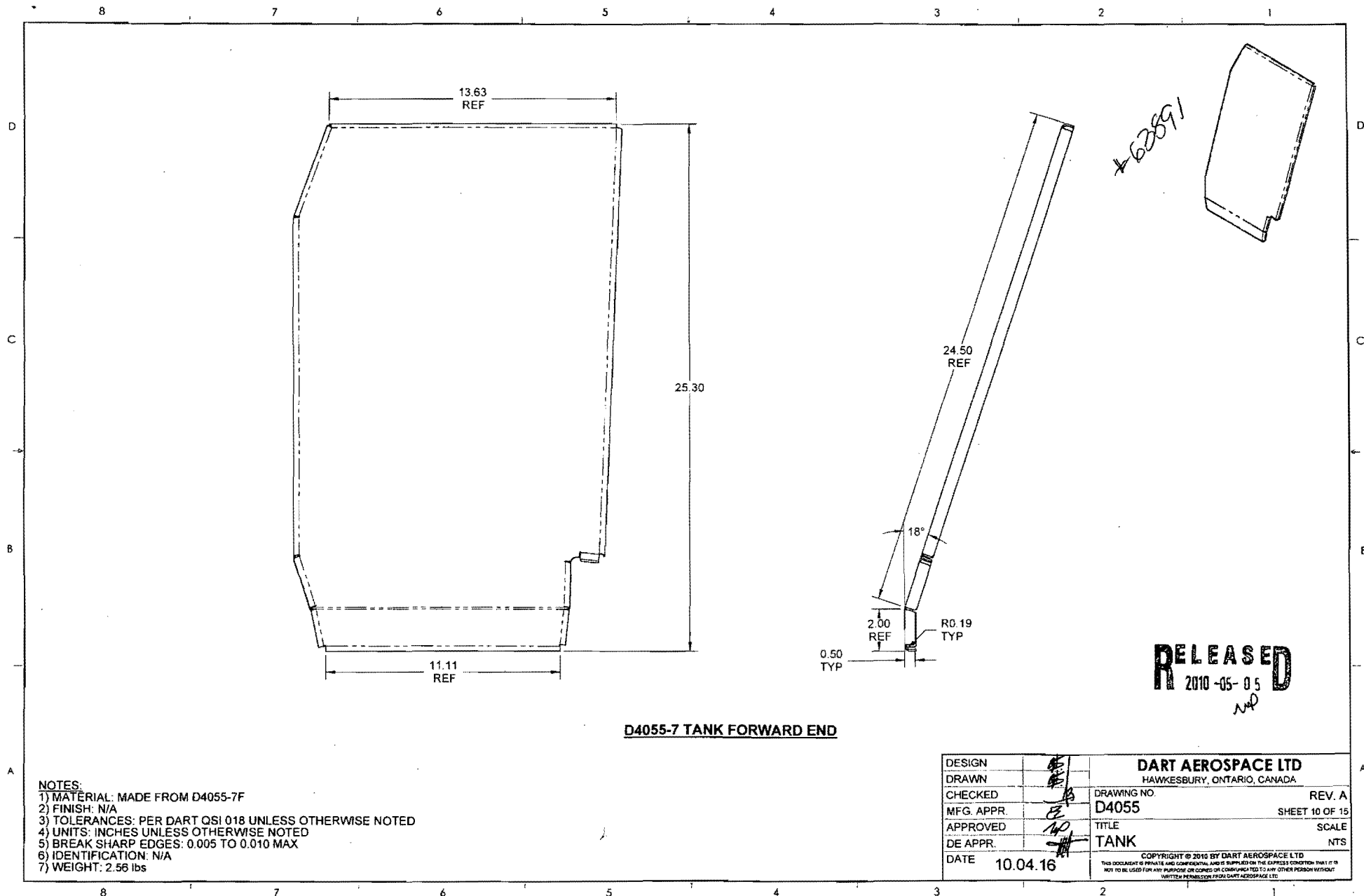
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

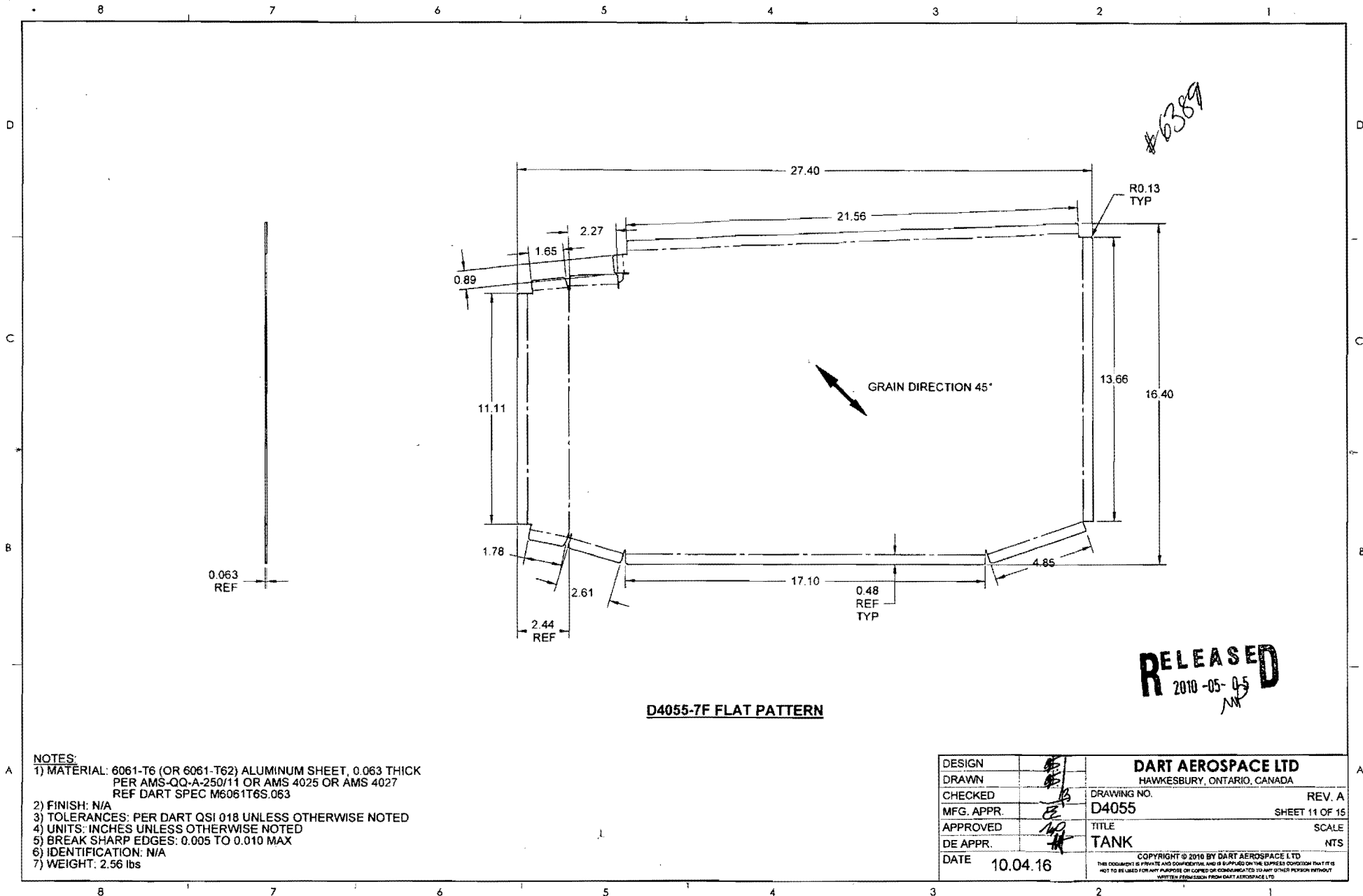
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

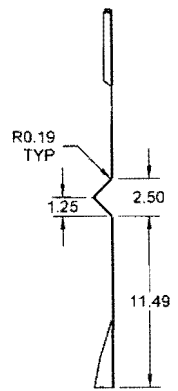
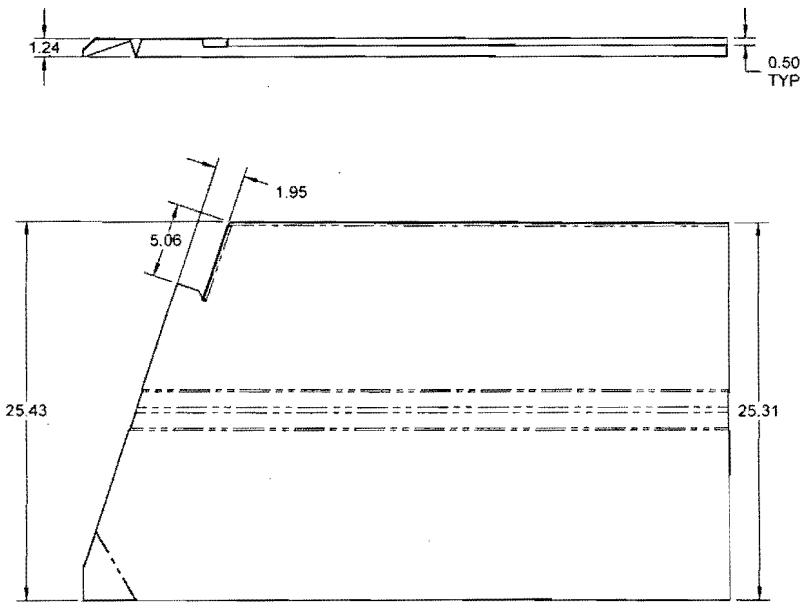
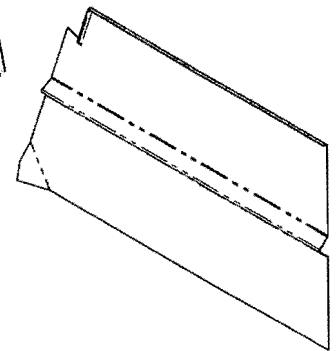
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

#62891



**D4055-9 TANK BACK**

**RELEASED**  
2010-05-05  
JM

- NOTES:
- 1) MATERIAL: MADE FROM D4055-9F
  - 2) FINISH: N/A
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: N/A
  - 7) WEIGHT: 6.41 lbs

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		<b>D4055</b>	SHEET 12 OF 15
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DE APPR.		<b>TANK</b>	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



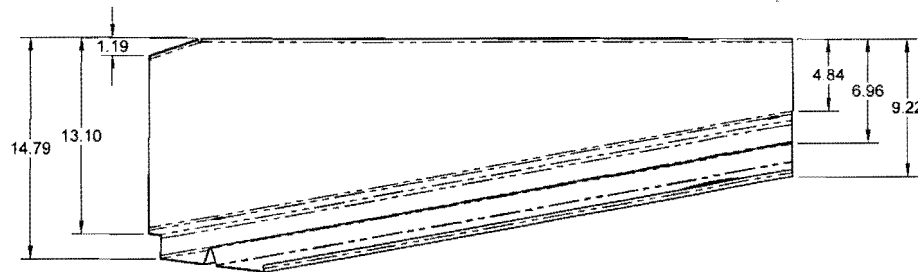
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

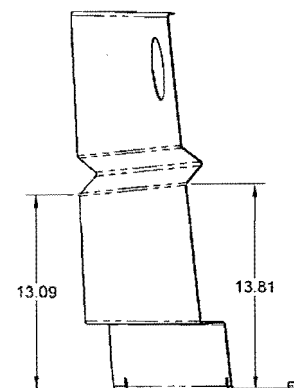
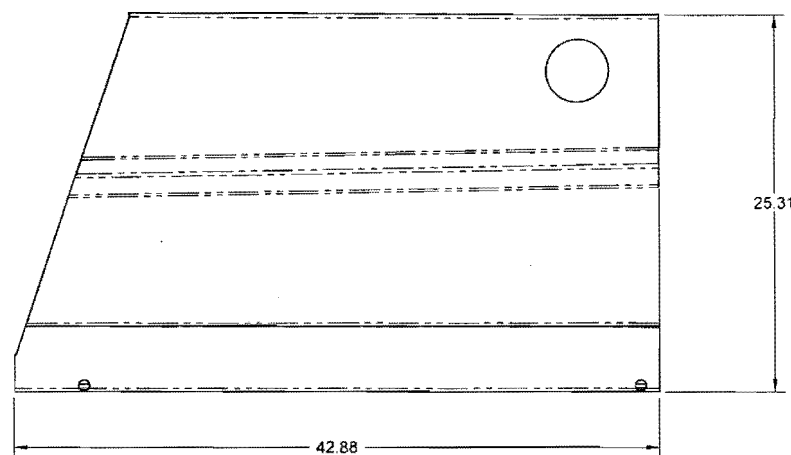
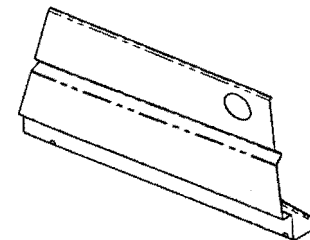
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



#63891



**D4055-11 TANK FRONT AND BOTTOM**

**RELEASED**  
2018-05-05  
JMD

- NOTES:
- 1) MATERIAL: MADE FROM D4055-11F
  - 2) FINISH: N/A
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: N/A
  - 7) WEIGHT: 9.29 lbs

DESIGN		<b>DART AEROSPACE LTD</b>	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		<b>D4055</b>	SHEET 14 OF 15
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

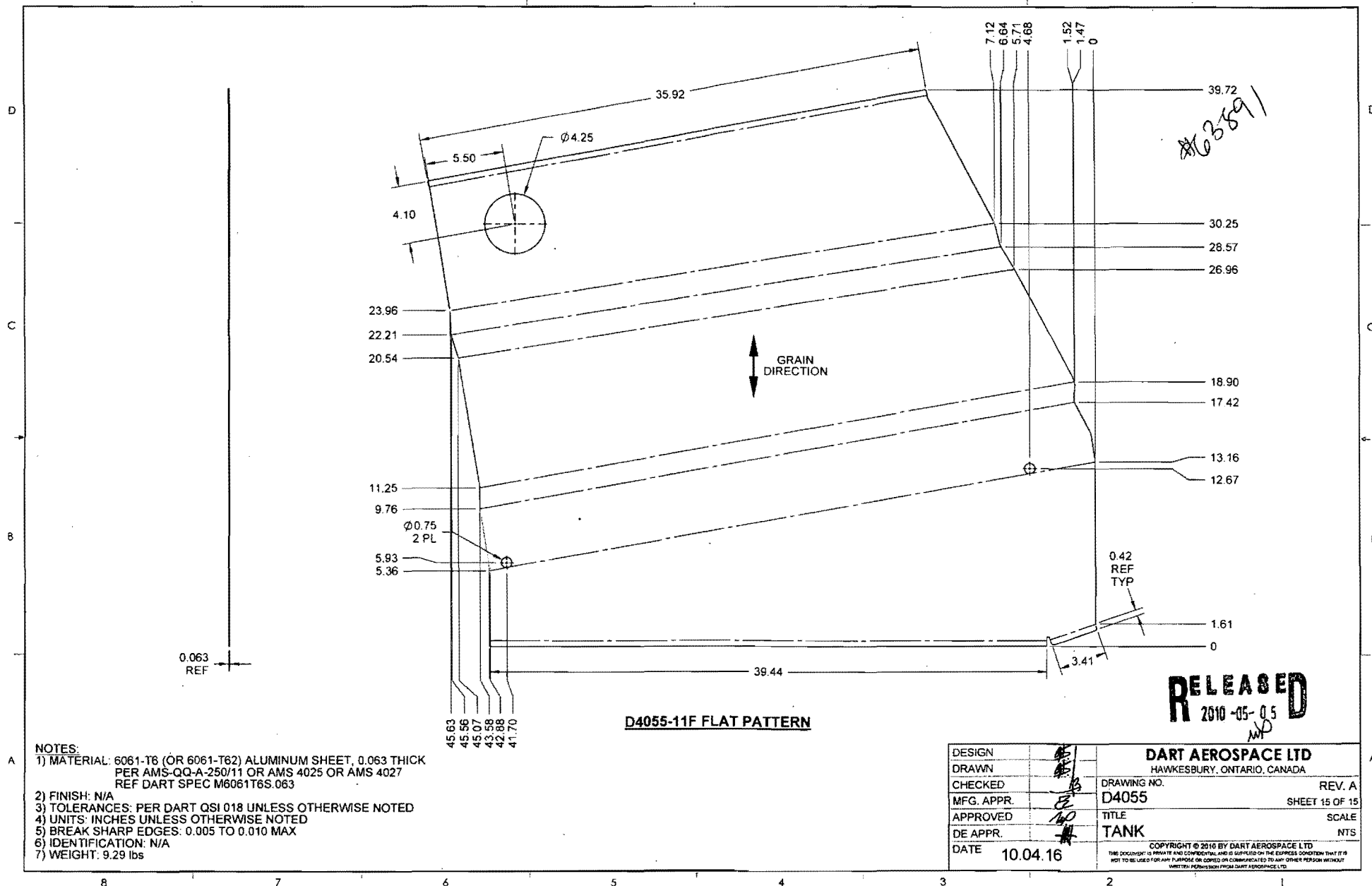
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries





W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

## Marc Bellavance

---

**From:** David Shepherd <dshepherd@dartaero.com>  
**Sent:** January 5, 2011 11:23 AM  
**To:** 'Marc Bellavance'; 'Siemens, Harvey'  
**Cc:** 'Beckett, Bill'; 'Murdoch, Jason'; 'Downing, Eric'  
**Subject:** RE: 350 Aux Tank

Marc,

This is acceptable but we should re-do the leak test on the tank.

Thanks,  
David

---

**From:** Marc Bellavance [mailto:mbellavance@dartaero.com]  
**Sent:** Wednesday, January 05, 2011 8:51 AM  
**To:** 'David Shepherd'; Siemens, Harvey  
**Cc:** 'Beckett, Bill'; 'Murdoch, Jason'; 'Downing, Eric'  
**Subject:** RE: 350 Aux Tank

OK,

Further to this, Russ managed to modify a tap to increase the depth of the threads by approximately 0.12" with results shown in attached pictures.

In other words, we are back to option 3. Only difference is, threads are now deeper than per drawing.

Is this still acceptable?

**Marc Bellavance**  
**Technical/Shop Support**  
***DART aerospace Ltd.***

Tel: 613-632-5200 Ext. 243

Cel: 613-676-0992

Fax: 613-632-9311

E-mail: [mbellavance@dartaero.com](mailto:mbellavance@dartaero.com)

Web: [www.dartaero.com](http://www.dartaero.com)

**Product Documentation: Verify Revision Status/Download [HERE!](#)**



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---

**From:** Marc Bellavance [mailto:mbellavance@dartaero.com]  
**Sent:** January 5, 2011 9:15 AM  
**To:** 'David Shepherd'; Siemens, Harvey  
**Cc:** 'Beckett, Bill'; 'Murdoch, Jason'; 'Downing, Eric'



**Subject:** RE: 350 Aux Tank  
**Importance:** High

David,

Russ started working on the aux tank to modify per option 3. Turns out that there are more than 2-3 threads damaged, more like twice that number (i.e. counterbore depth would be 0.23") and he is now saying that there will not be enough threads left if we go that route to properly install the fitting. Furthermore, since this is a pipe thread, this will also make for a looser fit since the fitting will bottom out with a lot less thread in grip.

So in short, we are back to either option 1 or 2...  
What is your preference?

**Marc Bellavance**  
**Technical/Shop Support**  
***DART aerospace Ltd.***

Tel: 613-632-5200 Ext. 243

Cel: 613-676-0992

Fax: 613-632-9311

E-mail: [mbellavance@dartaero.com](mailto:mbellavance@dartaero.com)

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---

**From:** David Shepherd [mailto:[dshepherd@dartaero.com](mailto:dshepherd@dartaero.com)]  
**Sent:** January 4, 2011 4:36 PM  
**To:** 'Marc Bellavance'  
**Cc:** 'Beckett, Bill'; 'Murdoch, Jason'; 'Downing, Eric'  
**Subject:** RE: 350 Aux Tank

Marc,

As discussed with Harvey, we recommend option 3 ... Not crazy about option 1 or 2.

David

---

**From:** Marc Bellavance [mailto:[mbellavance@dartaero.com](mailto:mbellavance@dartaero.com)]  
**Sent:** Tuesday, January 04, 2011 8:35 AM  
**To:** Shepherd, David  
**Cc:** Beckett, Bill; Murdoch, Jason; Downing, Eric  
**Subject:** 350 Aux Tank  
**Importance:** High

David,

Here is another manufacturing issue. Threads were stripped (2 to 3 threads) on ready for finish tank. Proposed solutions are:



- 1 – Scrap (not the preferred solution here since the tank is mostly done and to be shipped);
- 2 – Drill out a 0.500" hole and install a threaded bushing that would be held in place by welding;
- 3 – Clean the 2 to 3 stripped threads by counterboring the opening. The couterbore would be roughly 0.125" deep.

Attached picture is sort of showing the stripped threads on tank, same bushing as the one welded on tank, and proposed 0.500" OD threaded bushing.

Please advise how we should proceed.

**Marc Bellavance**  
**Technical/Shop Support**

***DART aerospace Ltd.***

Tel: 613-632-5200 Ext. 243

Cel: 613-676-0992

Fax: 613-632-9311

E-mail: [mbellavance@dartaero.com](mailto:mbellavance@dartaero.com)

Web: [www.dartaero.com](http://www.dartaero.com)

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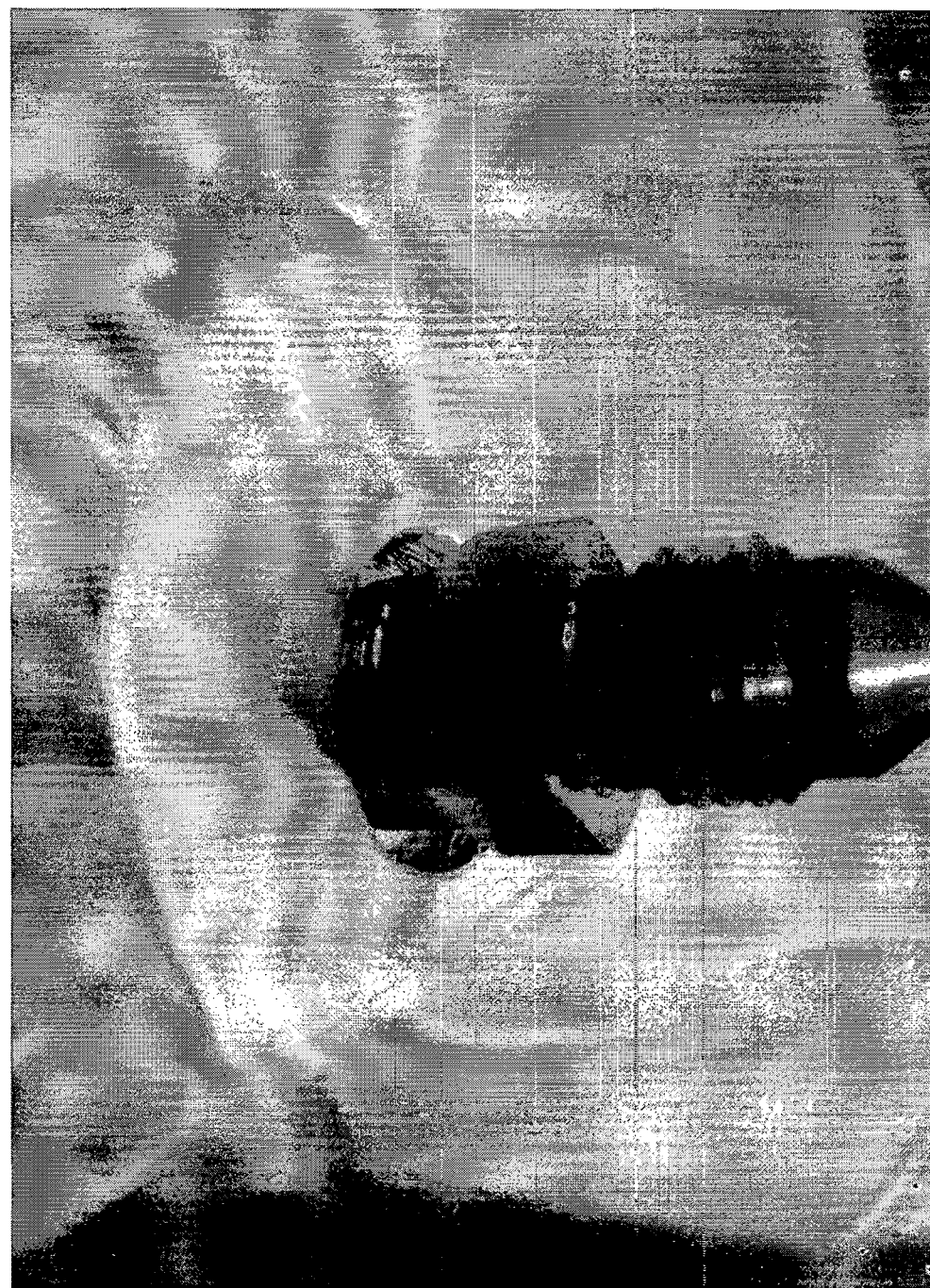
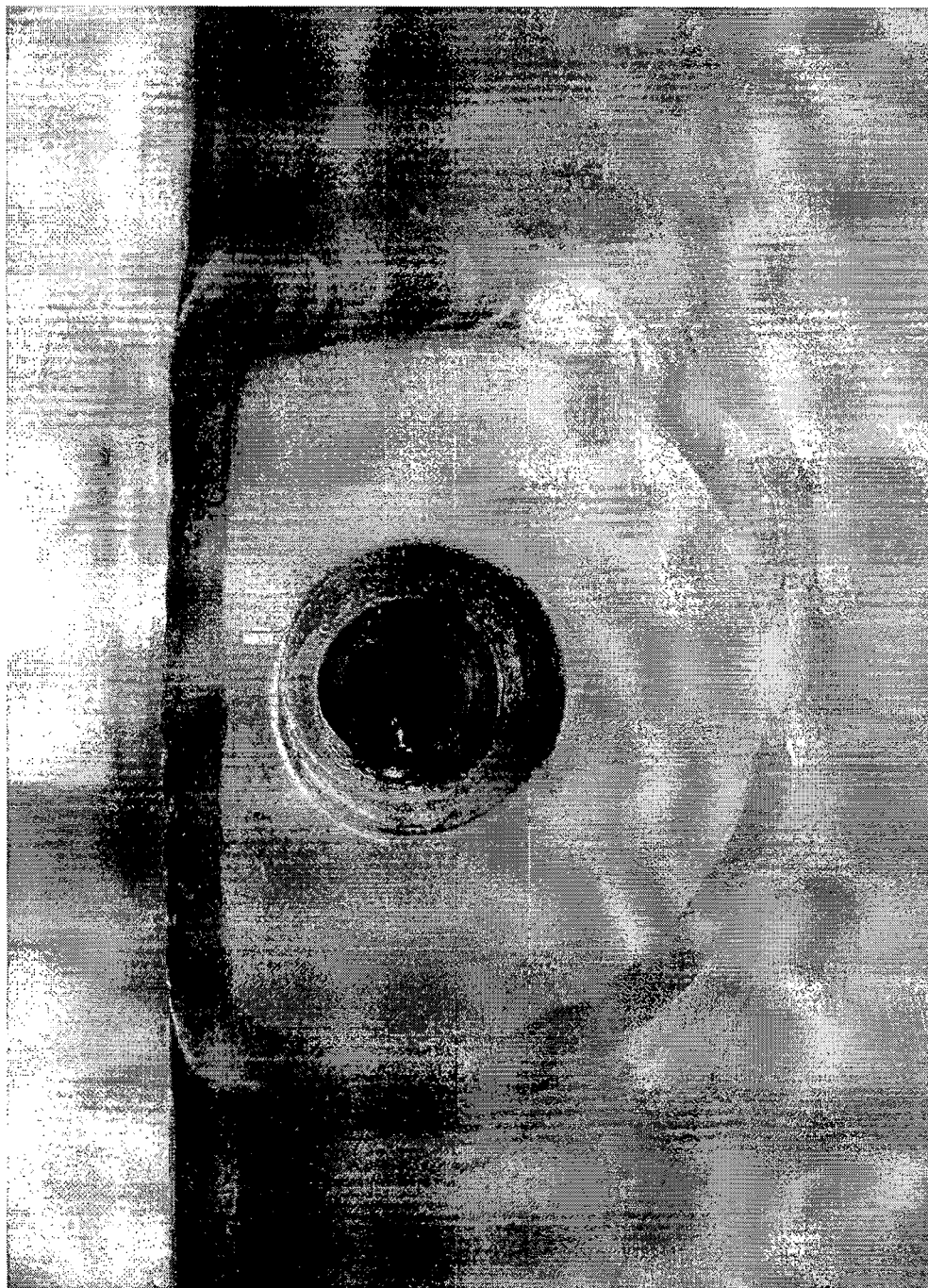


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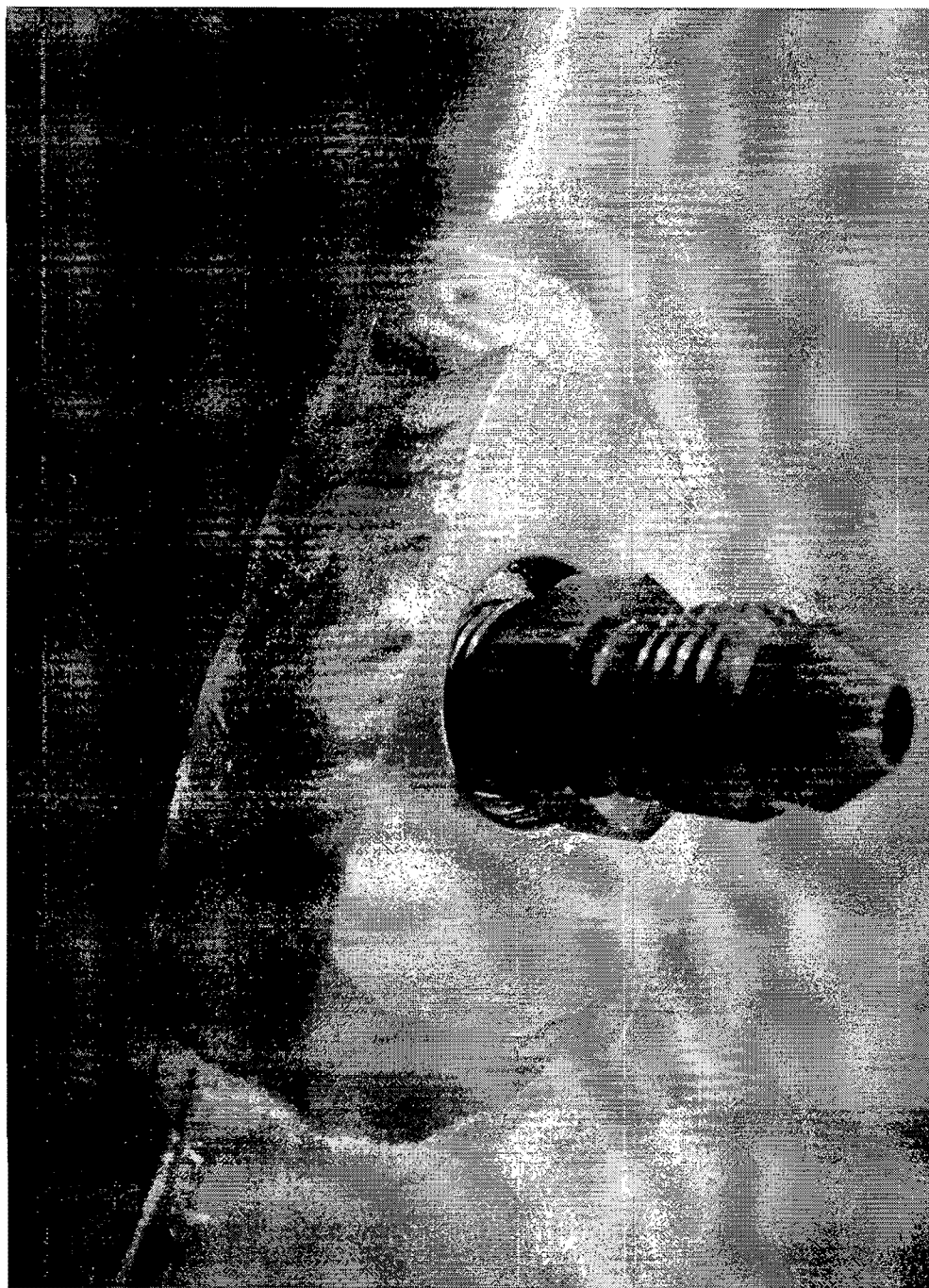




















# MONTAGEANLEITUNG / INSTALLATION INSTRUCTIONS



Standard-Tauchrohrgeber, Flanschlochkreis Ø 54 mm  
Standard Tubular Level Sensor, flange bolt circle dia. 54 mm

TU00-0772-5107120

11/04

1-5

1

## Sicherheitshinweise



- Das Produkt wurde unter Beachtung der grundlegenden Sicherheitsanforderungen der EG-Richtlinien und dem anerkannten Stand der Technik entwickelt, gefertigt und geprüft.

Das Produkt ist nur für den Einsatz in erdgebundenen Fahrzeugen (ausgenommen Motorräder) oder stationären Anlagen zu verwenden.

### Vor dem Einbau beachten:

- Für den Einbau sind Grundkenntnisse der Kfz-Elektrik und -Mechanik erforderlich, um Schäden zu vermeiden.
- Alle Daten von flüchtigen elektronischen Speichern notieren.
- Zündschlüssel vom Zündschloss abziehen. Danach den Minuspol der Batterie (auch von Zusatzbatterien) abklemmen.

Beim Abklemmen des Minuspols der Batterie verlieren alle flüchtigen elektronischen Speicher ihre eingegebenen Werte.

- Ein Nichtabklemmen des Minuspols der Batterie kann Kurzschlüsse im Bordnetz verursachen, die Kabelbrände, Batterieexplosionen und Beschädigungen anderer elektronischer Systeme auslösen können.
- Informieren Sie sich vor dem Einbau anhand der Kfz-Papiere über den Fahrzeugtyp und über eventuelle Besonderheiten und anhand von Bauplänen über die Lage von Kraftstoff-, Hydraulik-, Druckluft- und elektrischen Leitungen.
- Das Produkt bestimmungsgemäß einsetzen, nicht verändern oder manipulieren. Die Folgen einer nicht bestimmungsgemäßen Verwendung, einer Veränderung oder Manipulation des Produktes können Personen-, Sach-, oder Umweltschäden sein oder die Sicherheit beeinflussen.

### Während des Einbaues beachten:

- Auf die Sicherheitshinweise des Fahrzeug- oder Anlagen-, des Motor- und Handwerkszeugherstellers achten!
- Den Einbauort so wählen, dass das Produkt und dessen Komponenten
  - Funktionen des Fahrzeuges oder der Anlage nicht beeinflussen oder behindern.
  - durch Funktionen des Fahrzeuges oder der Anlage nicht beschädigt werden.

Nicht rauchen!  
Kein offenes Feuer oder Licht!

- Bohrungen oder Einbauöffnung nicht in tragende oder stabilisierende Streben oder Holme anbringen!

### Nach dem Einbau beachten:

- Massekabel an den Minuspol der Batterie fest ankleben.
- Werte der flüchtigen Speicher neu eingeben/programmieren.
- Prüfen Sie alle (!) Fahrzeugfunktionen.
- Benutzen Sie zum Messen von Spannungen und Strömen im Kfz nur dafür vorgesehene Multimeter oder Diodenprüflampen. Die Benutzung herkömmlicher Prüflampen kann die Beschädigung von Steuergeräten oder anderer elektronischer Systeme zur Folge haben.

### Sonderfälle:

- Falls notwendige Arbeiten am laufenden Motor erforderlich sind, besondere Vorsicht walten lassen. Tragen Sie nur entsprechende Arbeitskleidung, da Verletzungsgefahr durch Quetschungen und Verbrennungen besteht. Tragen Sie bei langen Haaren ein Haarnetz.

## Safety Instructions



- The product was developed, manufactured and inspected in compliance with the basic safety requirements of the EC Directives and in accordance with the generally recognised present level of technology.

The product must only be used for service in vehicles restricted to the ground (with the exception of motorcycles) or in stationary systems.

### Prior to installation of the product, please observe the following instructions:

- For proper installation of the product, basic knowledge of motor vehicle electrical and mechanical equipment is required in order to prevent damage.
- Write down all the data of volatile electronic memories.
- Remove the ignition key from the ignition lock. Then disconnect the minus pole of the battery (including the minus pole of any auxiliary batteries).  
When the minus pole of the batteries are disconnected, all volatile electronic memories lose their input values.
- Failure to disconnect the minus pole of the battery can cause short-circuits in the vehicle electrical system and then result in cable fires, battery explosions and damage to other electronic systems.
- Prior to installation of the product, refer to the motor vehicle registration documents for information on the vehicle type and any special equipment features and refer to the design plans for further information on the positions of fuel, hydraulic, compressed-air and electrical lines.
- Use the product as intended. Do not change or modify.  
Improper use, alteration or modification of the product can result in injuries, property damage or environmental damage or have an effect on safety.

### During installation of the product, please observe the following instructions:

- Observe the safety instructions of the manufacturers of the vehicle, system, motor and tools in each instance!
- Select the installation location so that the product and its components:

No smoking!  
No open fire or lights!

duct and its components:

- do not affect or hinder any functions of the vehicle or system.
- are not damaged by any functions of the vehicle or system.

- Do not make drilled holes or installation openings in supporting or stabilising braces or struts!

### Following installation of the product, please observe the following instructions:

- Connect the ground cable firmly to the minus pole of the battery.
- Enter / program the values of the volatile memories again.
- Check all (!) vehicle functions.
- When measuring the voltages and currents in the vehicle, only use multimeters or diode testing lamps that are designed to be used for such measurements. The use of conventional testing lamps can cause damage to the control units or other electronic systems.

### Special cases:

- Please be extremely careful whenever you must perform any required work on the running motor. Wear suitable working clothes only, since risk of suffering injuries such as bruises or burns exists. If your hair is long, wear a hairnet.

Standard-Tauchrohrgeber, Flanschlochkreis Ø 54 mm  
Standard Tubular Level Sensor, flange bolt circle dia. 54 mm

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## Elektrischer Anschluss

Schließen Sie die Kabel entsprechend dem elektrischen Anschlussplan an.  
Falschanschlüsse können zu Kurzschlüssen führen!

### Sicherheitshinweise:



- Kurzschlussgefahr durch fehlerhafte Verbindungsstellen oder gequetschte Kabel!  
Deshalb müssen alle Verbindungen der Spannungsversorgung entweder weich verlötet oder mit verschweißbaren Stoßverbindern versehen und ausreichend isoliert sein.  
Andere Verbindungen können Sie mit handelsüblichen Quetschverbindern herstellen.  
Besonders auf einwandfreie Masseverbindungen achten!  
Nicht benötigte Kabelenden unbedingt isolieren!
- Kabelquerschnitt beachten!  
Eine Verringerung des Kabelquerschnittes führt zu einer höheren Stromdichte. Dies kann zu einer Erhitzung des betreffenden Kabelabschnittes führen!
- Abisolierung von Kabeln nur mit einer Abisolierzange vornehmen. Die Zange so einstellen, dass dabei keine Litze beschädigt oder getrennt werden!
- Quetschverbindungen nur mit einer Kabelquetschzange vornehmen.
- Bei der Kabelverlegung vorhandene Kabelkanäle und Kabelstränge benutzen, jedoch nicht die Kabel parallel zu Zündkabeln oder zu Kabeln, die zu großen Stromverbräuchen führen, verlegen! Fixieren Sie die Kabel mit Kabelbändern oder Klebeband!
- Achten Sie darauf, dass die Kabel keinen Zug-, Druck- oder Scherkräften ausgesetzt sind!
- Wenn die Kabel durch Bohrungen geführt werden, schützen Sie die Kabel mittels Gummifüllern oder ähnlichen Teilen.

## Electrical Terminal Connection

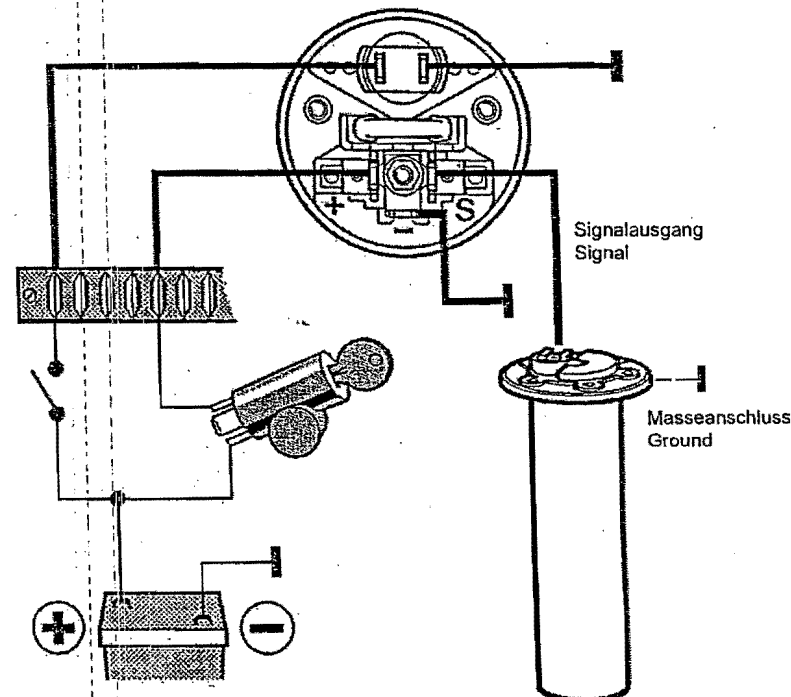
Connect the cables according to the electrical terminal connection diagram.  
Incorrect terminal connections can result in short-circuits!

### Safety Instructions



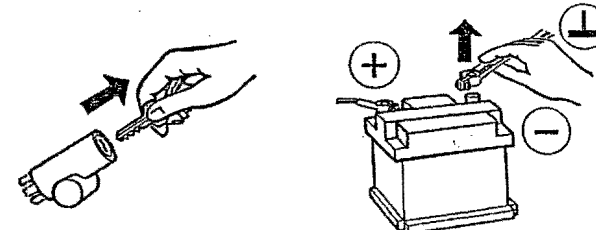
- Danger of short-circuits due to defective connecting points or pinched cables!  
All connections of the voltage supply system must therefore be soft-soldered or provided with weldable joint connectors and sufficiently insulated. You may use commercially available standard-type crimp connectors to make other connections.  
Make sure the ground connections are perfectly made!  
Insulate any cable ends that are not required!
- Take the cable cross-sectional area into account!  
A reduction of the cable cross-sectional area will result in higher current density. This can cause overheating of the affected cable section!
- Cables must be stripped using a wire stripper only. Adjust the wire stripper to prevent any strands from being damaged or cut off!
- Crimped connections must be made using a pair of cable crimping pliers only.
- When installing the cables, use the existing cable conduits and cable harnesses, but do not install the cables parallel to the ignition cables or cables that run over to high-capacity power consumers! Fasten the cables with cable straps or adhesive tape!
- Make sure the cables are not subjected to pulling, pressing or shearing forces!
- If the cables are run through drilled holes, protect the cables by means of rubber sleeves or similar parts.

VDO cockpit vision, international oder VDO modulcockpit II  
301-010-00X, 301-020-00X oder X10-110-98X-XXX  
301-030-00X, 301-040-00X



Bei Montage bitte Arbeitsschritte ① bis ⑤ beachten.  
While mounting please pay attention to work steps ① to ⑤.

①





# MONTAGEANLEITUNG / INSTALLATION INSTRUCTIONS



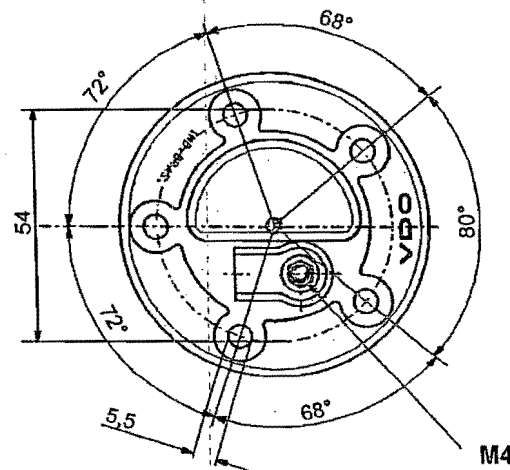
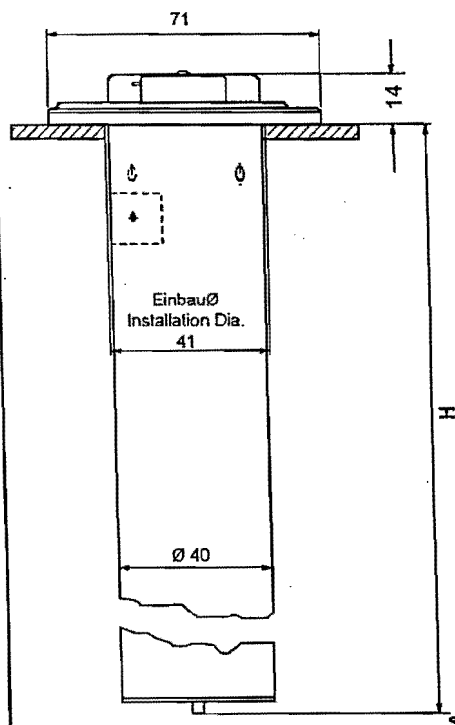
Standard-Tauchrohrgeber, Flanschlochkreis Ø 54 mm  
Standard Tubular Level Sensor, flange bolt circle dia. 54 mm

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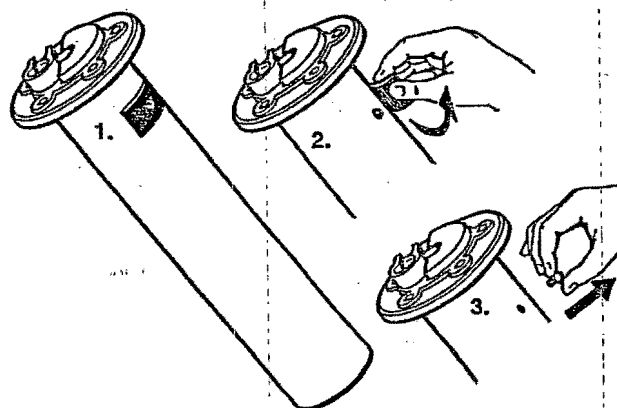
3



Mindestabstand (A) von Geberunterkante bis zum Tankboden: 4mm  
Minimum distance (A) from lower edge of sensor to tank floor: 4 mm

Geberlänge / Sensor length (H)

② Vor Montage Klebeband und Stift entfernen /  
Before installation, remove adhesive tape and pin.



## Gebereinbauort

Eine noch herzustellende Montageöffnung im Tank an einer günstigen Stelle für die Vorratsmessung oder ein vom Tankhersteller schon vorgesehener Montageflansch oder eine schon vorgesehene Montageöffnung.

## Sicherheitshinweise



Muss eine Montageöffnung hergestellt werden, ist der Tank vorher vollständig zu entleeren. Den Kraftstoff in einen zugelassenen Behälter füllen. Wenn möglich den Tank ausbauen. Bei Arbeiten unter dem Fahrzeug die Sicherheitshinweise des Fahrzeugherstellers beachten.

**Achtung:** Durch Restgase im Tank besteht Explosionsgefahr! Den Tank mit einem Gebläse gut durchlüften (ca. 10 Minuten). Montageöffnung mit Bohrer vorbohren und mit Loch- oder Stichsäge fertigstellen. Auf die Sicherheitshinweise des Handwerkzeugherstellers achten. Tank von Bohr- und Sägerückständen reinigen.

## Sensor installation location

An installation opening remaining to be made in the tank at a suitable point for supply level measurement or at an installation flange or installation opening already provided by the tank manufacturer.

## Safety instruction



If an installation opening must be made, the tank must be completely drained first. Fill the fuel into an approved container. remove the tank whenever possible. Comply with the safety instructions of the vehicle manufacturer for any work performed under the vehicle.

**Caution:** Risk of explosion exists due to presence of residual gases in the tank! Make sure that the tank is aired sufficiently (approx. 10 minutes).

Make a preliminary hole in the installation opening using a drill and then finish the hole using a compass saw or piercing saw. Comply with the safety instruction of the tool manufacturer. Clean the tank of residue from the drilling or sawing work.

Technische Änderungen vorbehalten - Technical details subject to change

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# MONTAGEANLEITUNG / INSTALLATION INSTRUCTIONS



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Standard Tubular Level Sensor, flange bolt circle dia. 54 mm

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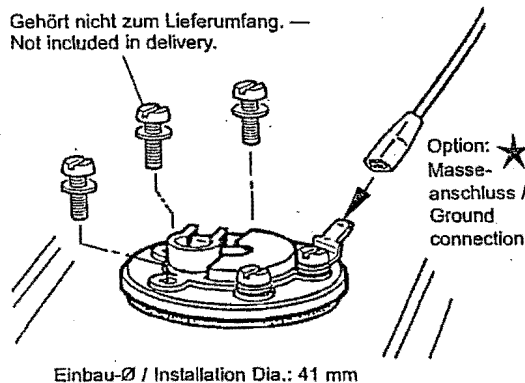
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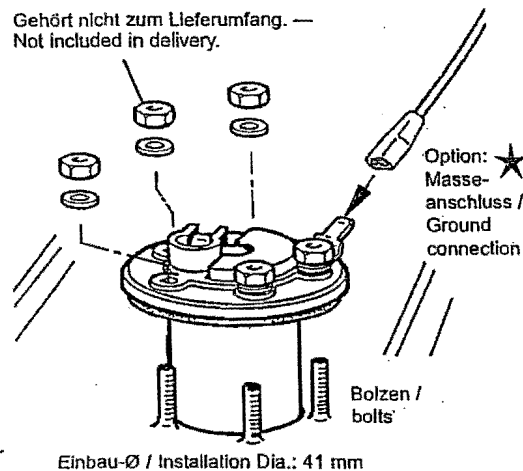
## Befestigungsart / Type of mounting:

- ③a mit 5 Schrauben / with 5 screws
- ③b mit 5 Bolzen / with 5 bolts
- ③c mit Befestigungsring / with mounting ring
- ③d mit Schweißflansch / with welding flange

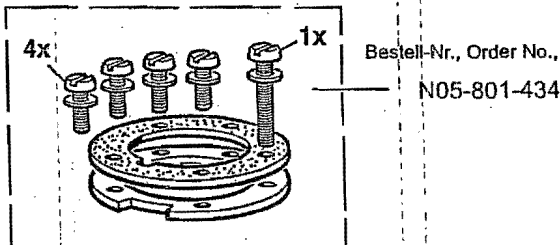
③a Gehört nicht zum Lieferumfang. —  
Not included in delivery.



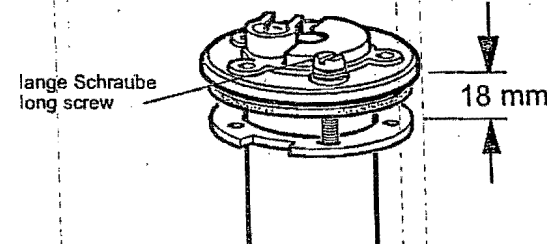
③b Gehört nicht zum Lieferumfang. —  
Not included in delivery.



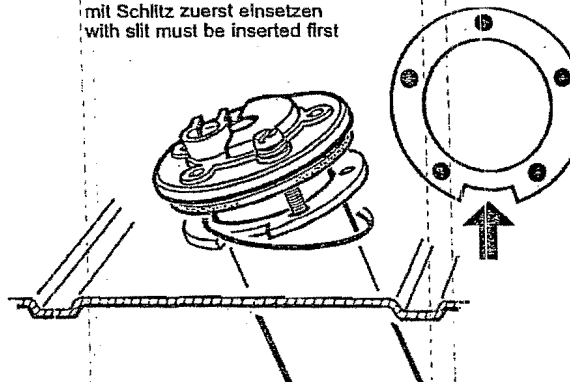
③c Tankflansch zum Anschrauben  
Tank flange for bolt-mounting



Einbau-Ø / Installation Dia.: 59 mm

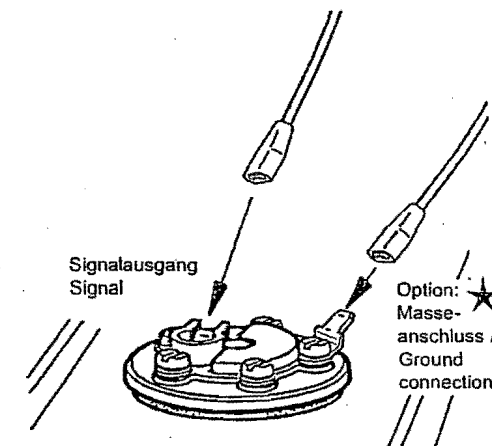
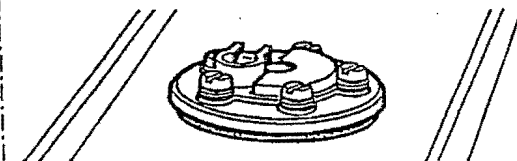
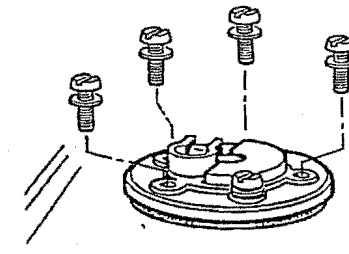


mit Schlitz zuerst einsetzen  
with slit must be inserted first



Option: ★  
Masse-  
anschluss /  
Ground  
connection

Bei Masseanschluss ist zwischen Flansch und Anschlussstecker eine zusätzliche Aluminium-Dichtscheibe Ø 5,1 - 5,3 mm erforderlich.  
In case of ground connection is required an additional aluminium sealing washer dia. 5.1 - 5.3 mm between flange and spade connector.



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# MONTAGEANLEITUNG / INSTALLATION INSTRUCTIONS



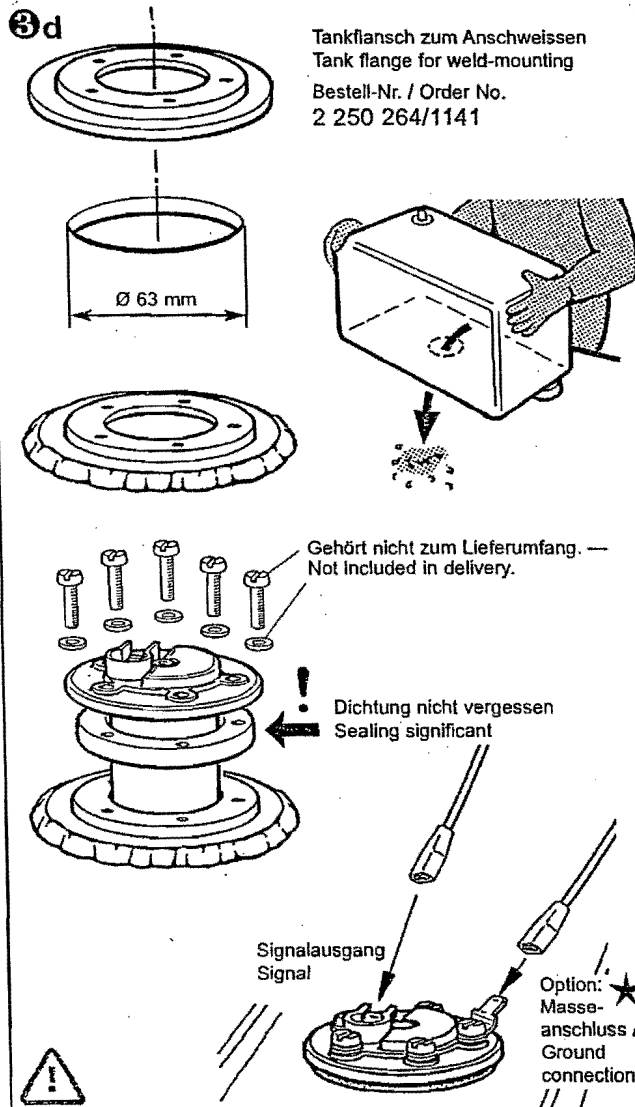
Standard-Tauchrohrgeber, Flanschlochkreis Ø 54 mm  
Standard Tubular Level Sensor, flange bolt circle dia. 54 mm

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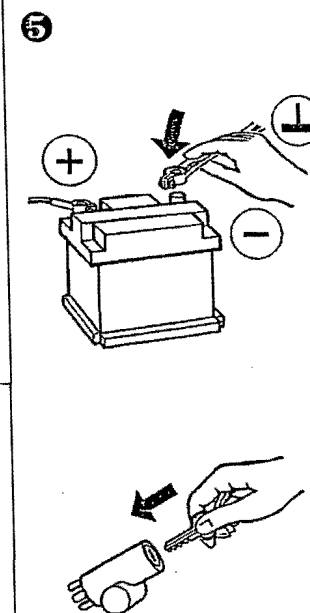
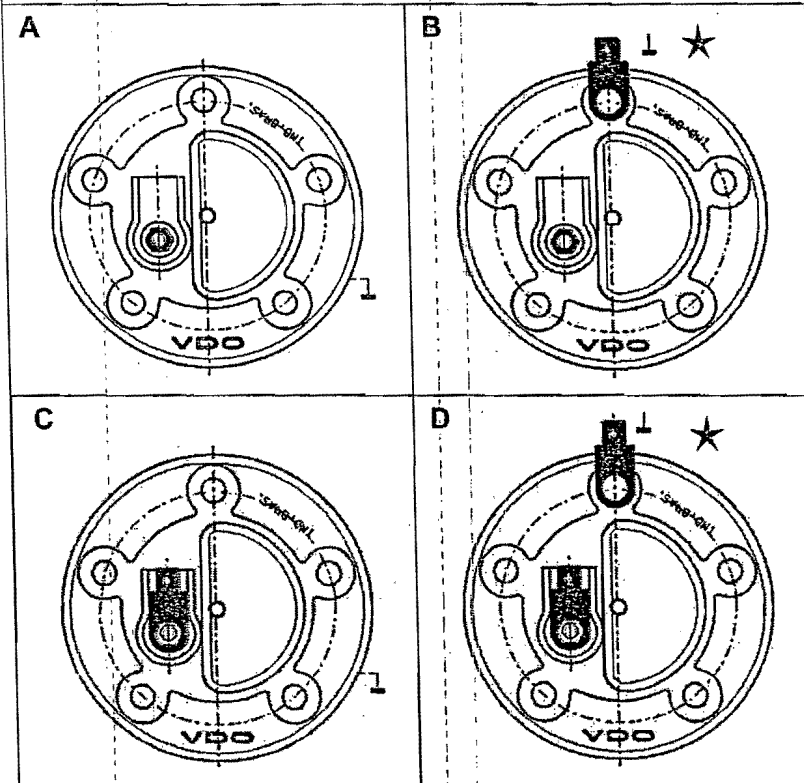
## 4 Anschlussart / Type of connection:

Mit den im Lieferumfang enthaltenen zwei Flachsteckern 6,3 x 0,8 mm sind folgende Konfigurationen der elektrischen Anschlüsse möglich:

- A M4 für Signalausgang ohne Masseanschluss
- B M4 für Signalausgang und Flachstecker für Masseanschluss
- C Flachstecker für Signalausgang ohne Masseanschluss
- D Flachstecker für Signalausgang und Flachstecker für Masseanschluss

With the two 6.3 x 0.8 mm spade connectors included in delivery the following configurations of the electric connections are possible:

- A Threaded stud M4 for signal output without ground connection
- B Threaded stud M4 for signal output and spade connector for ground connection
- C Spade connector for signal output without ground connection
- D Spade connector for signal output and spade connector for ground connection



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★ siehe Seite 4 / see page 4

Technische Änderungen vorbehalten - Technical details subject to change

